

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 was canceled. Claims 10-21 and 29-37 are withdrawn. Claims 2-9 and 22-28 are pending.

Cancel claims 5-8 and 23-24.

Amend claims 2, 4, 22, 25, and 27 as follows.

Listing of Claims:

1 1. **(canceled)**

1 2. **(currently amended)** The apparatus as recited in claim 5 [4]

2 further comprising:

3 means for dynamic management of the windows.

1 3. **(previously presented)** The apparatus as recited in claim 2

2 further comprising:

3 means for using historical values in present said windows to help
4 populate inserted said windows.

1 4. **(currently amended)** An apparatus for monitoring time series,
2 comprising:

3 one or more registers each comprising a ring buffer for
4 simultaneously storing a set of a plurality of received data points of a
5 corresponding time series, wherein at least one register comprises one or
6 more windows each corresponding to a subset of the set of received data
7 points of the register's corresponding time series and wherein the subset
8 changes with each received data point of the corresponding time series,
9 each window for maintaining statistics for the corresponding subset and
10 updating the statistics via online computation to account for data points of

11 the corresponding time series moving into and out of the corresponding
12 subset;
13 means for receiving data points of one or more time series and
14 storing the received data points in the corresponding registers;
15 means for receiving query strings representing queries;
16 means for compiling the received query strings into persistent
17 queries;
18 at least one said persistent query, each defining a query
19 represented by received said query strings, each persistent query being a
20 function of the time series of corresponding one or more trigger registers
21 of the one or more registers, and wherein at least one persistent query
22 defines an event condition and a payload specification of the defined
23 query and at least one of the event condition and the payload specification
24 of the at least one persistent query is a function of the statistics
25 maintained by at least one window of at least one of the corresponding
26 one or more trigger registers;
27 means, responsive to storing of a received data point in a trigger
28 register, for evaluating each persistent query corresponding to the trigger
29 register; and
1 means for outputting a payload of each evaluated persistent query
2 whose event condition has a first value.

1 5. (canceled)

1 6. (canceled)

1 7. (canceled)

1 8. (canceled)

1 9. (previously presented) The apparatus of claim 4 comprising:

2 means for dynamic management of persistent queries.

1 10. (withdrawn)

1 11. (withdrawn)

1 12. (withdrawn)

1 13. (withdrawn)

1 14. (withdrawn)

1 15. (withdrawn)

1 16. (withdrawn)

2

3 17. (withdrawn)

1 18. (withdrawn)

1 19. (withdrawn)

1 20. (withdrawn)

1 21. (withdrawn)

1 22. (currently amended) A computer-implemented method of
2 monitoring time series, comprising:

3 receiving query strings representing a query;

4 compiling from the received strings a persistent query defining the
5 represented query as a function of one or more time series;

6 receiving data points of the one or more time series;
7 storing the received data points each in a register comprising a ring
8 buffer for simultaneously storing at set of a plurality of received data points
9 of a corresponding one of the one or more time series, wherein at least
10 one register comprises one or more windows each corresponding to a
11 subset of the set of received data points of the register's corresponding
12 time series and wherein the subset changes with each received data point
13 of the corresponding time series;
14 maintaining statistics for any windows of the registers that store the
15 received data points and updating the statistics via online computation to
16 account for the data points of the corresponding time series moving into
17 and out of the corresponding subsets;
18 in response to storing of a received data point in a register, using
19 contents of the register to evaluate each persistent query that is a function
20 of the register's corresponding time series, including using contents of the
21 at least one window to evaluate at least one of an event condition and a
22 payload specification of the persistent query that is a function of the at
23 least one register's corresponding time series, where the at least one of
24 the event condition and the payload specification is a function of the
25 statistics for the at least one window of the at least one register; and
26 outputting a payload of each evaluated persistent query whose
27 event condition has a first value.

1 23. **(canceled)**

1 24. **(canceled)**

1 25. **(currently amended)** The method of claim ~~23~~22 wherein
2 updating statistics comprises;
3 performing online computation of the statistics.

1 26. **(previously presented)** The method of claim 22 further
2 comprising:
3 dynamically managing the persistent queries.

1 27. **(currently amended)** The method of claim ~~23~~22 further
2 comprising:
3 dynamically managing the windows.

1 28. **(previously presented)** The method of claim 27 further
2 comprising:
3 using historical values in present said windows to help populate
4 inserted said windows.

1 29. **(withdrawn)**

1 30. **(withdrawn)**

1 31. **(withdrawn)**

1 32. **(withdrawn)**

1 33. **(withdrawn)**

1 34. **(withdrawn)**

1 35. **(withdrawn)**

1 36. **(withdrawn)**

1 37. **(withdrawn)**